Amendments to the claims:

1-37   (Cancelled)

38.   (Currently Amended) A method for modifying a condition of a material, comprising:

obtaining a plurality of sensor readings associated with a plurality of longitudinal zones along a length of the material ~~the condition of the material~~ as the material moves;

acquiring travel length information associated with the material as the material moves;

determining ~~a deviation value associated with the condition of~~ a difference between a first wave height of the material in a first one of the longitudinal zones and a second wave height of the material in a second one of the longitudinal zones based on at least some of the plurality of sensor readings; and

adjusting a load applied to the material as the material moves based on ~~the deviation value and~~ the travel length information and the difference between the first and second wave heights to modify the condition of the material toward a desired condition.

39.   (Currently Amended) A method as defined in claim 38, wherein ~~the deviation value is a distance deviation value~~ acquiring the travel length information includes measuring the travel length of the material as the material moves.

40.   (Cancelled)

41.   (Previously Presented) A method as defined in claim 38, further comprising generating topographical information associated with a surface of the material based on the travel length information and the plurality of sensor readings.

42.   (Previously Presented) A method as defined in claim 38, further comprising determining a certification level of the material based on the plurality of sensor readings.

43.   (Previously Presented) A method as defined in claim 38, wherein the plurality of sensor readings are generated by at least one of a contact sensor or a non-contact sensor.

44.   (Previously Presented) A method as defined in claim 38, wherein adjusting the load applied to the material includes adjusting a position of a workroll to vary the load applied to the material.

45.   (Previously Presented) A method as defined in claim 38, wherein the material is a strip material.

46.   (Currently Amended) A system for modifying the flatness properties of a
continuously moving material, the system comprising:

a processor system; and

a memory communicatively coupled to the processor system, the memory
including stored instructions that enable the processor system to:

obtain a plurality of sensor readings associated with a plurality of
longitudinal zones along a length of the material the condition of the material
as the material moves;

acquire travel length information associated with the material as the
material moves;

determine a deviation value associated with the condition of a
difference between a first wave height of the material in a first one of the
longitudinal zones and a second wave height of the material in a second one of
the longitudinal zones based on at least some of the plurality of sensor
readings; and

adjust a load applied to the material as the material moves based on the
deviation value and the travel length information and the difference between
the first and second wave heights to modify the condition of the material
toward a desired condition.

47.   (Currently Amended) A system as defined in claim 46, wherein the is a
distance deviation value stored instructions enable the processor system to acquire the travel
length information by measuring the travel length of the material as the material moves.

48.   (Cancelled)

49.   (Previously Presented) A system as defined in claim 46, wherein the stored instructions enable the processor system to generate topographical information associated with a surface of the material based on the travel length information and the plurality of sensor readings.

50.   (Previously Presented) A system as defined in claim 46, wherein the stored instructions enable the processor system to determine a certification level of the material based on the plurality of sensor readings.

51.   (Previously Presented) A system as defined in claim 46, wherein the plurality of sensor readings are generated by at least one of a contact sensor or a non-contact sensor.

52.   (Previously Presented) A system as defined in claim 46, wherein the stored instructions enable the processor system to adjust a position of a workroll to vary the load applied to the material.

53.   (Previously Presented) A system as defined in claim 46, wherein the material is a strip material.

54.   (Currently Amended) A machine accessible medium having instructions stored thereon that, when executed, cause a machine to:

obtain a plurality of sensor readings associated with a plurality of longitudinal zones along a length of the material ~~the condition of the material~~ as the material moves;

acquire travel length information associated with the material as the material moves;

determine ~~a deviation value associated with the condition of~~ a difference between a first wave height of the material in a first one of the longitudinal zones and a second wave height of the material in a second one of the longitudinal zones based on at least some of the plurality of sensor readings; and

adjust a load applied to the material as the material moves based on the ~~deviation value and~~ the travel length information and the difference between the first and second wave heights to modify the condition of the material toward a desired condition.

55.   (Currently Amended) A machine accessible medium as defined in claim 54 having instructions stored thereon that, when executed, cause the machine to ~~generate a distance deviation value based on the at least some of the plurality of sensor readings~~ acquire travel length information by measuring the travel length of the material as the material moves.

56.   (Cancelled)

57.   (Previously Presented) A machine accessible medium as defined in claim 54 having instructions stored thereon that, when executed, cause the machine to generate topographical information associated with a surface of the material based on the travel length information and the plurality of sensor readings.

58.   (Previously Presented) A machine accessible medium as defined in claim 54 having instructions stored thereon that, when executed, cause the machine to determine a certification level of the material based on the plurality of sensor readings.

59.   (Previously Presented) A machine accessible medium as defined in claim 54 having instructions stored thereon that, when executed, cause the machine to obtain the plurality of sensor readings from at least one of a contact sensor and a non-contact sensor.

60.   (Previously Presented) A machine accessible medium as defined in claim 54 having instructions stored thereon that, when executed, cause the machine to adjust a position of a workroll to vary the load applied to the material.

61.   (Currently Amended) A method of modifying a condition of a material, comprising:

translating the material past ~~a sensor~~ first sensor associated with a first zone and a second sensor associated with a second zone;

determining a ~~plurality of deviation values~~ first wave height of a surface of ~~a~~ the material associated with the first zone and a second wave height of the surface of the material associated with the second zone, ~~each corresponding to a different one of a plurality of zones associated with the surface of the material~~; and

automatically varying ~~forces applied to the surface of the material in at least two of the plurality of zones~~ a roll plunge associated with the first zone by an amount calculated using the second wave height to modify a condition of the material ~~in one of the plurality of zones~~.

62.   (Currently Amended) A method as defined in claim 61, wherein varying the ~~forces~~ roll plunge comprises varying a force applied to the surface of the material ~~comprises varying a workroll plunge~~.

63.   (Currently Amended) A method as defined in claim 61, wherein varying the ~~forces applied to the surface of the material~~ roll plunge comprises varying a workroll center distance.

64.   (Currently Amended) A method as defined in claim 61, further comprising acquiring travel length information associated with the material as the material moves and automatically varying the ~~forces applied to the surface of the material~~ roll plunge based on the travel length information.

65.   (Currently Amended) A method as defined in claim 64, further comprising determining a plurality of peak values for each of the ~~plurality of~~ first and second zones based on the ~~plurality of deviation values~~ first and second wave heights.

66.   (Currently Amended) A method as defined in claim 65, wherein determining the plurality of peak values includes determining a minimum deviation value or a maximum deviation value based on the ~~plurality of deviation values~~ first and second wave heights.

67.   (Currently Amended) A method as defined in claim 65, wherein varying the ~~forces applied to the surface of the material~~ roll plunge is based on the plurality of peak values.

68.   (Previously Presented) A method as defined in claim 61, further comprising acquiring a travel length value associated with the material using an encoder.

69.   (Currently Amended) A method as defined in claim 61, wherein the ~~plurality of deviation values~~ first and second wave heights are determined using at least one of a contact sensor and a non-contact sensor.

70.   (Previously Presented) A method as defined in claim 61, further comprising determining a certification level of the material based on flatness properties of the material.

71.   (Currently Amended) A method as defined in claim 61, wherein the ~~forces applied to the material are imparted by a workroll~~ calculated amount is equal to an average deviation value associated with the second zone.

72.   (Currently Amended) A system for conditioning a moving material, the system comprising:

~~a sensor that detects a distance to a surface of the moving material;~~

a first sensor separated by a first distance from a surface of the moving material;

a second sensor separated by a second distance from the surface of the moving material;

a controller communicatively coupled to the ~~sensor~~ first and second sensors and configured to ~~obtain a distance value associated with the distance to the surface of the moving material~~ compare the first distance to the second distance; and

a roller operatively coupled to the controller, wherein the controller varies a position of the roller based on the comparison to vary a load applied to the moving material to ~~achieve a desired~~ condition ~~of~~ the moving material.

73.   (Previously Presented) A system as defined in claim 72, further comprising an encoder communicatively coupled to the controller and configured to measure a travel length value associated with the moving material.

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74.   (Currently Amended) A system as defined in claim 72, wherein the first

sensor is one of a contact sensor or a non-contact sensor.

75.   (Previously Presented) A system as defined in claim 72, wherein the moving

material is a strip material.

76.   (Currently Amended) A system as defined in claim 72, wherein the load is

associated with at least one of a threshold distance value and an average distance value

generated based on ~~the distance value~~ at least one of the first distance or the second distance.

77. (Currently Amended) A method of leveling strip material, the method comprising:

moving the strip material past a first sensor <u>associated with a first longitudinal zone along a length of the strip material</u> and a second sensor <u>associated with a second longitudinal zone along the length of the strip material</u>;

obtaining a first plurality of readings from the first sensor;

obtaining a second plurality of readings from the second sensor;

determining a ~~deviation value associated with a leveling condition of the strip material~~ <u>first wave height value</u> based on at least one of the first plurality of readings and <u>a second wave height value based on</u> at least one of the second plurality of readings; and

generating an electrical signal to cause an adjustment of a load applied to the strip material in response to ~~the deviation value~~ <u>comparing the first and second wave height values</u>.

78. (Currently Amended) A method as defined in claim 77, wherein ~~determining the deviation value comprises~~ <u>comparing the first and second wave height values includes</u>:

determining a first average for the first plurality of readings;

determining a second average for the second plurality of readings; and

determining a difference between the first average and the second average.

79. (Previously Presented) A method as defined in claim 77, wherein moving the strip material past the first sensor and the second sensor comprises moving the strip material past at least one non-contact sensor.

80.   (Previously Presented) A method as defined in claim 77, wherein moving the strip material past the first sensor and the second sensor comprises moving the strip material past at least one of an acoustic sensor, an optical sensor, or a riding needle sensor.

81.   (Previously Presented) A method as defined in claim 77, further comprising determining a length associated with the strip material based on an input from an encoder.

82.   (Previously Presented) A method as defined in claim 77, wherein causing the adjustment of the load comprises causing a change in a workroll plunge.

83.   (Previously Presented) A method as defined in claim 82, wherein causing the change in the workroll plunge comprises adjusting a hydraulic cylinder operatively coupled to a backup bearing.

84.   (Previously Presented) A method as defined in claim 77, wherein causing the adjustment of the load comprises causing a change in a workroll center distance.

85.   (Currently Amended) A method of conditioning a material, the method comprising:

moving the material past a sensor plurality of sensors located across a width of the material and associated with a plurality of longitudinal zones;

determining a deviation value associated with topographical information associated with the plurality of longitudinal zones indicative of a condition of the material as the material passes the sensor;

determining a distance between a first sensor reading location and a second sensor reading location; and

generating an electrical signal to cause an adjustment of a force applied to the material based on the deviation value and the distance topographical information if at least some of the topographical information exceeds a threshold; and

determining a certification level indicative of a condition of the material based on the topographical information.

86.   (Currently Amended) A method as defined in claim 85, wherein moving the material past the sensor plurality of sensors comprises moving the material past at least one of an acoustic sensor or an optical sensor.

87.   (Cancelled)

88. (Currently Amended) A method as defined in claim 85, wherein ~~determining the distance between the first sensor reading location and the second sensor reading location comprises receiving a signal from an encoder~~ the threshold is associated with a distance between one of the plurality of sensors and a surface of the material.

89. (Previously Presented) A method as defined in claim 85, wherein causing the adjustment in the force applied to the material comprises causing a change in a workroll plunge.

90. (Previously Presented) A method as defined in claim 89, wherein causing the change in the workroll plunge comprises adjusting a hydraulic cylinder.

91. (Previously Presented) A method as defined in claim 85, wherein causing the adjustment in the force applied to the material comprises causing a change in a workroll center distance.

92.   (Currently Amended) An apparatus to condition a material, comprising:

a roller configured to condition the material;

a first sensor positioned to measure a first height value of a surface of the material;

a second sensor positioned to measure a ~~distance to a~~ second height value of the surface of the material; and

a controller operatively coupled to the roller and the ~~sensor~~ first and second sensors, wherein the controller is configured to generate an electrical signal in response to ~~the distance~~ a comparison of the first height value and the second height value, ~~and wherein the roller is adjusted based on the electrical signal~~ to condition the material.

93.   (Previously Presented) An apparatus as defined in claim 92, further comprising a hydraulic cylinder operatively coupled to the controller and configured to adjust the roller in response to the electrical signal.

94.   (Previously Presented) An apparatus as defined in claim 93, further comprising a backup bearing operatively coupled to the hydraulic cylinder and the roller, wherein the backup bearing causes a change in a plunge associated with the roller.

95.   (Currently Amended) An apparatus as defined in claim 92, wherein the first sensor comprises an acoustic sensor.

96.   (Currently Amended) An apparatus as defined in claim 92, wherein the first sensor comprises an optical sensor.

97.   (Currently Amended) An apparatus as defined in claim 92, further comprising an encoder operatively coupled to the controller, wherein the controller is configured to use the encoder to determine a distance between a first ~~sensor reading~~ height measuring location and a second ~~sensor reading~~ height measuring location.

98.   (Previously Presented) An apparatus as defined in claim 92, wherein the controller is configured to cause the generation of certification information associated with the material.

99.   (Previously Presented) An apparatus as defined in claim 98, further comprising a printer operatively coupled to the controller to print at least some of the certification information.

100.   (Previously Presented) An apparatus as defined in claim 98, further comprising a display device operatively coupled to the controller to display at least some of the certification information.

101.   (Previously Presented) A method of modifying a condition of a material, comprising:

obtaining a first deviation value associated with a material condition of a first zone of the material as the material moves;

obtaining a second deviation value associated with the material condition of a second zone of the material as the material moves; and

adjusting a load applied to the first zone of the material based on a comparison of the first and second deviation values.

102.   (Previously Presented) A method as defined in claim 101, wherein the first deviation value is obtained by determining a first average deviation based on a first plurality of sensor readings associated with the first zone of the material, and wherein the second deviation value is obtained by determining a second average deviation based on a second plurality of sensor readings associated with the second zone of the material.

103.   (Previously Presented) A method as defined in claim 101, wherein adjusting the load applied to the first zone of the material comprises determining that the first zone of the material is not flatter than the second zone of the material based on the comparison of the first and second deviation values.

104.   (Previously Presented) A method as defined in claim 101, wherein the first deviation value is represented using a first I-unit value and the second deviation value is represented using a second I-unit value.

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105.   (Previously Presented) A method as defined in claim 104, wherein the first I-unit value is determined based on a peak value and a span value associated with the first zone.

106.   (Previously Presented) A method as defined in claim 105, wherein the peak value is calculated by multiplying a first zone average value by two and subtracting the known thickness of the material from the result of the multiplication.

107.   (Previously Presented) A method as defined in claim 105, wherein the span value is calculated by dividing a length of the first zone by a number of peaks in the first zone.

108.   (Previously Presented) A method as defined in claim 101, wherein adjusting the load applied to the first zone comprises adjusting the load applied to the first zone and a third zone based on the comparison of the first and second deviation values.

109.   (Currently Amended) A method of modifying a condition of a material, comprising:

obtaining a first plurality of sensor readings associated with a first zone of the material as the material moves, ~~wherein at least some of a plurality of values associated with the first plurality of sensor readings deviate from one another~~;

obtaining a second plurality of sensor readings associated with a second zone of the material as the material moves;

determining a first height value based on the first plurality of sensor readings;

determining a second height value based on the second plurality of sensor readings; and

adjusting a load applied to <u>the material in</u> the second zone ~~of the material~~ <u>to condition the material in the first zone</u> as the material moves based on a comparison of the first and second height values.

110.   (Currently Amended) A method as defined in claim 109, wherein each of the first and second height values is selected from the group consisting of an average deviation value, a maximum deviation value, an I-unit, and a square root of a sum of squares of deviation values.

111.   (Previously Presented) A method as defined in claim 109, further comprising acquiring a travel length value associated with the material as the material moves and adjusting the load applied to the second zone of the material based on the travel length value.

112.   (Currently Amended) A method as defined in claim 109, further comprising comparing the first and second height values to a predetermined threshold value associated with a substantially flat condition and adjusting the load applied to the second zone of the material based on the comparison of the first and second height values to the predetermined threshold value.

113.   (Currently Amended) A method of modifying a condition of a material, comprising:

obtaining a first determining a peak value based on an average deviation value associated with a first zone of the material as the material moves;

dividing the peak value by a length of the first zone to determine a quotient value;

determining a first I-unit value indicative of the condition of the material based on the quotient value;

comparing the first deviation I-unit value to a an I-unit threshold value associated with a desired condition of the material; and

adjusting a load applied to a second zone of the material as the material moves based on the comparison of the first deviation I-unit value to the I-unit threshold value.

114.   (Currently Amended) A method as defined in claim 113, ~~wherein the first deviation value is selected from the group consisting of an average deviation value, a maximum deviation value, an I-unit, and a square root of a sum of squares of deviation values~~ further comprising determining a certification level of the material based on the first I-unit value.

115.   (Currently Amended) A method as defined in claim 113, further comprising adjusting a third zone of the material as the material moves based on the comparison of the first ~~deviation~~ I-unit value to the I-unit threshold value.

116.   (Currently Amended) A method as defined in claim 113, further comprising:

obtaining a ~~second deviation~~ determining a third I-unit value associated with ~~the second~~ a third zone of the material and a fourth I-unit value associated with a fourth zone of the material as the material moves;

comparing the ~~first deviation~~ third I-unit value to the ~~second deviation~~ fourth I-unit value; and

adjusting ~~a first~~ another load applied to the ~~first~~ third zone ~~of the material and a second load applied to the second zone of the material~~ of the material as the material moves based on the comparison of the ~~first deviation value to the second deviation value~~ third and fourth I-unit values.

117.   (Currently Amended) A method as defined in claim 116, wherein the load applied to the ~~first~~ other zone ~~and the second zone~~ of the material is adjusted based on ~~the first~~ a surface deviation value.

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